RELATIONS AMONG INFANT FACE-VOICE MATCHING, CANONICAL BABBLING, AND EXPRESSIVE LANGUAGE

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BACKGROUND

- Canonical babbling is a well-established predictor of expressive language outcomes¹,²
- Findings from the Multisensory Attention Assessment Protocol (MAAP)³ demonstrate that 12-month intersensory processing of synchronous faces and voices predicts 18-month vocabulary, holding well-established predictors (e.g., parent language input, socioeconomic status) constant.⁴
- Few studies have characterized the relations between canonical babbling and intersensory matching of faces and voices.
- The current study assessed relations among intersensory matching of faces and voices and canonical babbling and the extent to which each predicted unique variance in expressive vocabulary size.

METHODS

Participants

- Infants (N = 90) participated in a longitudinal study from 3-72 months of age.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Participants N (%)</th>
<th>Mean Age (months)</th>
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</thead>
<tbody>
<tr>
<td>Parent-Child Interaction</td>
<td>85 (46.9%)</td>
<td>12.04</td>
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<tr>
<td>MAAP</td>
<td>75 (46.7%)</td>
<td>11.9</td>
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<tr>
<td>MB-CDI</td>
<td>51 (50.98%)</td>
<td>18.05</td>
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Procedure

- Predictors at 12 months:
  - Canonical babbling: Infants participated in an 8-minute semi-structured parent-child interaction to measure infants’ proportion of canonical syllables relative to total number of syllables.
  - Vocalization production was segmented and annotated from video recordings using ELAN.
  - Intersensory matching: Infants also participated in the MAAP, to assess face-voice matching.
- Infants viewed two women speaking side-by-side in the presence of a central distractor event, along with a soundtrack synchronous with one of the two women (see Figure 1).

MAIN FINDINGS

Intersensory matching of faces and voices significantly and fully mediates the relation between canonical babbling and expressive vocabulary.

![Scatterplots](image)

In fact, intersensory matching of faces and voices accounts for 16% unique variance in predicting expressive language, while canonical babbling accounts for 4%.

RESULTS

- Correlations:
  - Canonical babbling predicts intersensory matching of faces and voices, r = .20, p < .05.
  - Intersensory matching predicts expressive vocabulary, r = .37, p < .001.
  - Canonical babbling predicts expressive vocabulary, r = .16, p < .05.
- Mediation Model:
  - Canonical babbling at 12 months significantly predicted intersensory matching at 12 months, p < .05.
  - In turn, intersensory matching significantly predicted expressive vocabulary, p < .001.
  - However, canonical babbling did not significantly predict expressive vocabulary, holding constant.
  - Thus, intersensory matching of faces and voices significantly and fully mediates the relation between canonical babbling and expressive vocabulary.
  - An alternative mediation model revealed that canonical babbling did not mediate the relations between intersensory matching and expressive vocabulary.

CONCLUSIONS

- Consistent with the literature, we found that infant canonical babbling at 12 months and intersensory matching at 12 months predicted expressive language outcomes at 18 months.
- Findings also demonstrate evidence of a novel relation between canonical babbling and intersensory matching.
- Our mediation analysis revealed that intersensory matching fully mediates the relation between canonical babbling and expressive language outcomes.
- Greater canonical babbling leads to better intersensory matching and in turn better expressive language outcomes.

REFERENCES


ACKNOWLEDGEMENTS

We would like to thank the children and families who participated in this longitudinal study with the Infant Development Lab. This research was also made possible through the following grants through the NICHD: R01 HD094803 and R01 HD053776-11 awarded to the last author.

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